

New species of *Paracylindromorphus* and *Taphrocerus* from South Africa, with comments on their relationships (Coleoptera: Buprestidae)

by

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Paracylindromorphus cephalopristis Bellamy, sp. nov., is described from the southwestern Cape Province. *Taphrocerus capensis* Hespenheide, sp. nov., the first Old World species of both this genus and its tribe, Brachyini, is described from Natal. Brief comments on the relationship between these genera and *Aphanisticus* and their respective subfamilies and tribes are given.

INTRODUCTION

The genera *Paracylindromorphus* Théry and *Taphrocerus* Solier are, at present, widely separated within the contemporary higher classification of the Buprestidae (see Bellamy 1985). *Paracylindromorphus* is a member of the Cylindromorphinae Portevin (*sensu* Cobos 1980), an Old World taxon comprised of seven genera which are widespread except for the Australasian region. *Taphrocerus*, on the other hand, is placed within the Brachyini Cobos (Trachyinae Gory & Laporte) and until now both the genus and tribe were only known from the New World.

After the descriptions of the two new species, we discuss their apparent relationships along with those of peripheral groups, based upon morphological and biological similarities.

Label data are presented as printed, with data on individual labels separated by a slash mark.

Acronyms for collections which loaned material or have received new type material are from Arnett *et al.* (1986) as follows:

BPBM - B. P. Bishop Museum, Honolulu, Hawaii, USA.

CLBC - C. L. Bellamy collection.

¹ Present address: 2738 Glasgow Drive, Carlsbad, Ca 92008, USA

CHAH — H. A. Hespenheide collection.

SANC — National Collection of Insects, Pretoria

TMSA — Transvaal Museum, Pretoria

***Paracylindromorphus cephalopristis* Bellamy, sp. nov., Figs 1–5**

Holotype male. Size, $3,7 \times 0,7$ mm (maximum length vs. width); cylindrical; narrow, elongate; black with dark aeneous reflection; surface glabrous except for ring setae (Fig. 2).

Head (Figs 3, 4): elongate, length subequal to pronotum; vertex with fine median longitudinal groove; frontovertex strongly produced between eyes to roundly attenuate apex; eyes large, only slightly visible from above, widely separated, further from base of head than from apex, posterior margin flat, anterior margin rounded, narrowed to acuminate ventral apex; frons with shallow bisinuate supraantennal groove; antennal insertions large, separated by less than their width; epistoma strongly narrowed between antennae, distally strongly roundly emarginate, laterally strongly incised, together with genal depression forming a groove for reception of basal antennomeres in repose; labrum distally bilobed, with recumbent testaceous setae, surface finely shagreened, with large, semi-regular shallow punctures.

Antenna: with antennomere 1 elongate, thickened; 2 shorter than 1, globose; 3–5 small, subequal; 6–10 serrate; 11 oblong.

Pronotum: length subequal to width, widest at middle, slightly constricted before base, then widening slightly at acute basal angles; anterior margin arcuate; posterior margin (Fig. 2) trisinuate, finely serrate; lateral margins carinate, sinuate; prelateral carinae sinuate, not reaching apex, becoming confluent with lateral carinae at basal angles; disc flatly convex, slightly transversely depressed anteriorly to base; surface as on head.

Scutellum (Fig. 2): disc convex, triangular, equilateral, anterior margin convex, surface finely shagreened.

Elytra: as wide as pronotum, widest beyond middle, narrowing from beyond humeri to before middle, then widening before gradually narrowing to separately rounded apices; $2,5 \times$ as long as wide; basal margins each with rounded transverse costa between suture and humerus; humeri moderately elevated, straight, longitudinal; lateral margins explanate in basal $\frac{1}{3}$, disc flattened, transversely rugose, becoming less so towards apex.

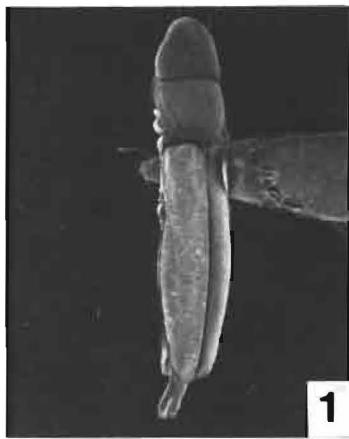
Underside: prosternum as in Fig. 4; metacoxal plate broadly, shallowly, angularly emarginate on posterior margin; suture between abdominal sternites 1 and 2 only feebly indicated laterally; length of sternites 3, 4 and 5 together subequal to that of 1 and 2 together; 5 trapezoidal, with wide explanate margin, narrowly so on lateroapical $\frac{1}{2}$, wider across subtruncate apical margin; surface finely shagreened.

Legs: femora fusiform, more strongly swollen basally; tibiae arcuate, externally explanate, widest before apex; tarsi with segment 5 elongate, apically swollen; claws thickened, apices not widely separated.

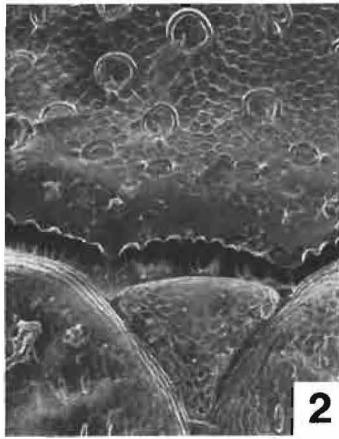
Genitalia: as in Fig. 5.

Variation. The two paratypes vary in size, $3,5$ – $4,2 \times 0,6$ – $0,9$ mm, with the smaller specimen having the aeneous reflection reduced.

MATERIAL EXAMINED. Holotype and 2 paratypes, 1 male (CLBC) and 1 female (TMSA); SOUTH AFRICA: Cape Province, Heuningnes Riv., 34.42°S — 20.02°E / $28.10.1983$, E-Y: 2029, grassnetting, leg. Endrödy-Younga.



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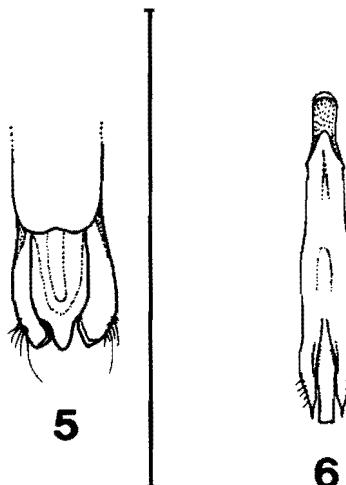


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Figs 1-4. *Paracylindromorphus cephalopristis* Bellamy, sp. nov.; Fig. 1, dorsal habitus; Fig. 2, base of pronotum and scutellum, dorsal view; Fig. 3, lateral view of head; Fig. 4, ventral view of head and thoracic sternites. Scale bars equal 500 μ (Figs 1, 3, 4) and 50 μ (Fig. 2).



Figs 5–6. Male genitalia; Fig. 5, *Paracylindromorphus cephalopristis* Bellamy, sp. nov., distal portion, dorsal view; Fig. 6, *Taphrocerus capensis* Hespenheide, sp. nov., dorsal view. Scale bar equals 1,0 mm.

The name is a combination of the Greek roots *cephalus* (head) and *pristes* (shark) for the unusual head.

P. cephalopristis comes closest to *P. braunsi* (Obenberger) of which one of us (CLB) has examined the holotype (TMSA, type 10). *P. braunsi* was described from Algoa Bay in the eastern Cape Province and differs from *P. cephalopristis* by being smaller, black, having the apex of the head more rounded and less strongly produced, the basal angles of the pronotum more strongly acute, by the shape of the male genitalia and by the widely separated localities.

Taphrocerus capensis Hespenheide, sp. nov., Figs 6–10

Holotype male. Shape as *T. agriloides* Crotch, length 3,2 mm, width 1,0 mm; moderately elongate and convex above, moderately shining, black with greenish reflections.

Head (Fig. 9): nearly transverse in front with only very shallow median depression, more deeply depressed below middle; surface indistinctly shagreened, irregularly punctate, punctures small and shallow, each with an inconspicuous seta; sparse row of setae behind epistoma, epistomal pores moderately large, separated by own diameter; eyes not prominent.

Pronotum: 1,5 × as wide as long, widest just behind middle; moderately convex, narrowly transversely depressed along anterior margin and more broadly and indistinctly so behind middle, obliquely so parallel to sides; sides arcuately rounded, surface distinctly shagreened, with irregular small shallow punctures, each with an inconspicuous seta.



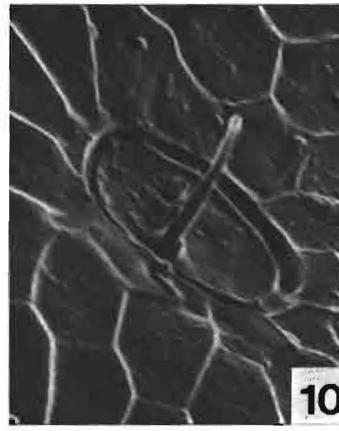
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Figs 7–10. *Taphrocerus capensis* Hespenheide, sp. nov.; Fig. 7, dorsal habitus; Fig. 8, ventral habitus; Fig. 9, ventral view of head and thoracic sternites; Fig. 10, ring seta, prosternum, ventral view. Scale bars equal 500 μ (Figs 7–9) and 5 μ (Fig. 10).

Elytra: at humeri slightly narrower than pronotum, widest at middle, rather convex dorsally in cross section, apices separately rounded and denticulate; surface transversely rugose at base, becoming indistinctly so beyond the middle, punctures with rather long but inconspicuous decumbent setae.

Underside (Figs 8, 9): antennal grooves on prosternum rather broad and very shallow; abdomen indistinctly shagreened, sparsely punctate and pubescent; last visible abdominal sternite rounded laterally, subtruncate distally; lateroapical margin denticulate, with preapical groove following outline of apical margin.

Genitalia: as in Fig. 6.

Allotype female: as male, except without setae behind epistoma, and apical margin of last visible abdominal sternite with a quadrate emargination.

Variation. The series of paratypes agrees in most every detail to that found within the holotype or allotype.

MATERIAL EXAMINED. Holotype (BPBM 13788), allotype (BPBM) and 38 paratypes: SOUTH AFRICA: Natal, Royal Natal National Park, 11.xii.1970 (J., J. H., and M. Sedlacek. Paratypes deposited in BPBM (28), CLBC (2), CHAH (4), SANC (2) and TMSA (2).

This is the first species of *Taphrocerus* known from the Old World, which makes *Taphrocerus*, along with *Pachyschelus* Solier, the only other trachyne genus unequivocally shared between the Old and New Worlds, although there is possibly a third, depending on the correctness of the generic placement of *Trachys brasiliæ* Obenberger. *Taphrocerus* is a large genus (136 species listed in Blackwelder 1944), whose greatest diversity appears to be in southeastern Brazil and northern Argentina. Hosts in Central America are palms or species of Cyperaceae, although few descriptive biologies have been published.

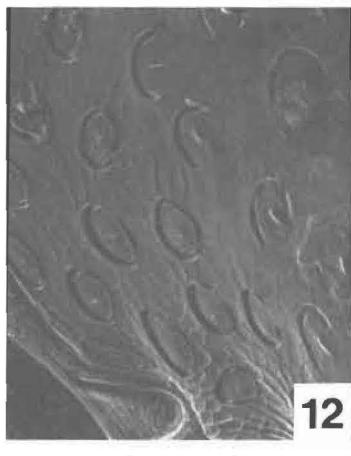
T. capensis appears to be closely related to a group of species that in North and Central America include *T. agriloides* and *T. kerremansi* Duges, and in the Antilles include *T. haitensis* Fisher (Hispaniola) and *T. aeneocupreus* Fisher (Cuba). This group is characterized by a relatively unsculptured, convex pronotum, the somewhat unusual and more or less sexually dimorphic nature of the last visible abdominal sternite and the relative similarity of the male genitalia. *T. capensis* differs from the species mentioned above in having greenish rather than reddish or coppery reflections, in the quadrate apical emargination of the female last visible abdominal sternite, as well as in details of the surface sculpture of the head and pronotum, the epistomal pores, and the size and shape of the apical groove of the last visible sternite. Additional similar but undetermined species are known from southeastern Brazil.

RELATIONSHIPS

An interesting character, which was first reported by Wellso *et al.* (1976) for *T. gracilis* Say, is the so-called 'belt buckle sensory organ' or, as we prefer, ring setae (e.g. Fig. 10). This character has now been found in three genera from three different tribes placed within two subfamilies (Fig. 2, *Paracylindromorphus*, *Cylindromorphinae*; Fig. 10, *Taphrocerus*, *Brachyini* and Fig. 12, *Aphanisticus* Latreille, *Aphanisticini* Jacquelain du Val, both *Trachyinae* *sensu* Cobos 1979). This suggests a closer relationship than is indicated by the current classification. Species of these three genera have similar biologies, as all are obligate leaf- or stem-miners of various monocotyledonous hosts. Also, a similar epistomal configuration exists, especially between *Paracylindromorphus* and



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Figs 11–12. *Aphanisticus* sp.; Fig. 11, head and thoracic sternites, ventral view; Fig. 12, ring setae, prosternum, ventral view. Scale bars equal 500 μ (Fig. 11) and 50 μ (Fig. 12).

Aphanisticus (Figs 4, 9 & 11). Whether these repeated characters reflect a closer relationship between these taxa or are simply convergent due to similar niche requirements must be decided by further study.

ACKNOWLEDGMENTS

We would like to express our gratitude to the following individuals: Prof. E. Holm of this department, for providing work space and support for research for one of us (CLB) and for comments on an earlier draft of the manuscript; Drs S. Endrödy-Younga (TMSA) and G. A. Samuelson (BPBM), for the loan of material in their care; Mr. R. G. Oberprieler (SANC) for critical review of the manuscript; and Mr. J. Putterill, Dept. of Microbiology and Plant Pathology, Univ. of Pretoria, for his time and expertise in taking the SEM photographs.

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Accepted 25 May 1987